

DOCKET NO. 1999.06.003.WS0

U.S. SERIAL NO. 09/197,993

PATENT

REMARKS

Claims 26-49 are pending in the present application.

Claims 26-49 were finally rejected in the April 20, 2006 Office Action.

Claims 26-49 are amended herein.

Reconsideration of the claims is respectfully requested in light of the following arguments.

In Sections 5-15 of the April 20, 2006 Office Action, the Examiner finally rejected Claims 26-49 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,222,220 to Mehta (hereafter "*Mehta*") in view of "StackGuard: Automatic Adaptive Detection and Prevention of Buffer-Overflow Attacks" by Cowan, *et al.* (hereafter "*Cowan*"). The Applicant respectfully traverses the rejection of Claims 26-49.

The Applicant directs the Examiner's attention to amended independent Claim 26, which contains the following unique and novel limitations:

26. A method for detecting corruption associated with a stack in a storage device, the stack encompassing a range of memory of a fixed size, the method comprising the steps of:

storing a first predetermined value in a first address location immediately preceding the range of memory;

detecting the occurrence of a stack operation within the stack; and

comparing the value in the first address location to the first predetermined value to determine if the stack operation corrupted the first predetermined value stored in the first address location.

The Applicant respectfully asserts that the above-emphasized limitations are not disclosed, suggested, or even hinted at in the *Mehta* reference, the *Cowan* reference, or in the combination of the *Mehta* and *Cowan* references.

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The *Cowan* reference describes a compiler extension that generates program code to push a “canary word” onto the top of the stack whenever a return address is pushed onto the stack during a function call. In Sections 2-4 of the April 20, 2006 Office Action, in response to Applicant’s arguments filed February 2, 2006, the Examiner equates this top of the stack location with the starting location of the stack. In order to more particularly point out and distinctly claim the Applicants’ invention, Claim 26 has been amended to recite a stack that encompasses a range of memory of a fixed size, and a method comprising the step of storing a first predetermined value in a first address location immediately preceding the range of memory. In contrast, the *Cowan* reference clearly describes a system that pushes a “canary word” onto the top of a stack of varying size.

The *Mehta* reference does nothing to overcome this shortcoming of the *Cowan* reference. The *Mehta* reference describes a method of detecting stack related errors in a microprocessor system. When a return address is pushed onto the stack, the method includes the step of also saving the return address in an additional register, or latch, within the microprocessor. Upon returning from a function, the return address popped off the stack is compared to the address stored in the register to detect stack corruption. Whether considering the return address on the top of the stack or the return address stored in the register, the *Mehta* reference fails to describe a value in a first address location immediately preceding a range of memory of a fixed size, as recited in amended Claim 26.

In sum, the unique and novel limitations recited in Claim 26 are not disclosed, suggested, or even hinted at in the *Mehta* reference, the *Cowan* reference, or in the combination of the *Mehta* and *Cowan* references. This being the case, Claim 26 presents patentable subject matter over the *Mehta*

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and *Cowan* references. Also, Claims 27-37 depend from Claim 26 and contain all of the unique and novel limitations recited in Claim 26. Therefore, Claims 27-37 also are patentable over the *Mehta* and *Cowan* references.

The Applicant respectfully asserts that independent Claim 38 contains limitations that are analogous to the unique and novel limitations recited in Claim 26. This being the case, independent Claim 38 presents patentable subject matter over the *Mehta* and *Cowan* references. Finally, Claims 39-49, which depend from Claim 38, contain all of the unique and novel limitations recited in Claim 38. Therefore, Claims 39-49 also are patentable over the *Mehta* and *Cowan* references.

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SUMMARY

For the reasons given above, the Applicant respectfully requests reconsideration and allowance of the pending claims and that this application be passed to issue. If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at *jmockler@munckbutrus.com*.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.


Respectfully submitted,

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